

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rules 44bis.3(c) and 72.2)

To:



AGATA, Akira
Agata Patent Office, 3rd Floor, Ikeden Building, 12-5,
Shimbashi 2-chome, Minato-ku, Tokyo
1050004
JAPON

Date of mailing (day/month/year) 01 February 2007 (01.02.2007)	
Applicant's or agent's file reference 05-105NIS	IMPORTANT NOTIFICATION
International application No. PCT/JP2005/006167	International filing date (day/month/year) 30 March 2005 (30.03.2005)
Applicant NATIONAL INSTITUTE OF ADVANCED INDUSTRIAL SCIENCE AND TECHNOLOGY et al	

1. Transmittal of the translation to the applicant.

☐

The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).

☒

The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

EP, KR

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Masashi Honda

Facsimile No. +41 22 338 82 70

Facsimile No. +41 22 338 82 70

TRANSLATION**PATENT COOPERATION TREATY****PCT****INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 05-105NIS	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2005/006167	International filing date (day/month/year) 30.03.2005	Priority date (day/month/year) 31.03.2004
International Patent Classification (IPC) or national classification and IPC A01H13/00		
Applicant NATIONAL INSTITUTE OF ADVANCED INDUSTRIAL SCIENCE AND TECHNOLOGY		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. I

Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):
- ☒ the international application as originally filed/furnished
- ☐ the description:
- pages _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ the claims:
- nos. _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* _____ received by this Authority on _____
- nos.* _____ received by this Authority on _____
- ☐ the drawings:
- sheets _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1-10	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-10	NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)			
Document 1: Hirotaka KAKITA et al., "Ogata Kaiso Tsurushiramo no Seicho he no Muroto Kaiyo Shinsosui no Eikyo," Bulletin of the Society of Sea Water Science, Japan, 01 August 2000, Vol. 54, No. 4, pages 310 to 315			
Document 2: Ryuta TERADA et al., ed., "Ogonori no Riyo to Tenbo," first edition, Koseisha Koseikaku, 10 October 2001, pages 27, 30 to 31, 33, 48 and 101 to 104			
Document 3: Hirotaka KAKITA et al., "Muroto Kaiyo Shinsosui no Tokusei Haaku oyobi Kino Kaimei," Heisei 10-12 Nendo Kagaku Gijutsu Sogo Kenkyu Itakuhi, Chiiki Sento Kenkyu, Kenkyu Seika Hokokusho, Zaidan Hojin Kochi- ken Sangyo Shinko Center, March 2001, pages 176 to 192			
Claims 1 to 10			
The inventions set forth in claims 1 to 10 do not involve an inventive step in the light of documents 1 to 3 cited in the international search report.			
Document 1 describes the establishment of a unialgal culture strain of large-sized red algae			

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

belonging to the species *Gracilaria chorda* by acquiring the matured sporophytes of *Gracilaria chorda* from the Seto inland sea (more specifically, from the bay of Tokushima City in Tokushima Prefecture, Japan) and then cultivating the spores that are released from said matured sporophytes.

Meanwhile, document 2 indicates that algae of the genus *Gracilaria* are distributed along the Japanese coast and grow in brackish water in the vicinity of estuaries or inlets, depending on the exact species thereof (page 27); indicates that the species of *Gracilaria* have a wide resistance to nutrient salt concentrations, meaning that it might be possible to use species of *Gracilaria* as environment-protecting algae for absorbing nutrient salts (pages 30 to 31); indicates that among the different species of *Gracilaria*, there are species and/or populations for which few mature algae have been found (page 33); indicates that species of *Gracilaria* have been cultivated (page 48); indicates that the hemagglutinin produced by algae of the genus *Gracilaria* exhibits a relatively strong hemagglutinating action (pages 101 to 103); and indicates that it may be possible to apply the mitogenic hemagglutinin that are derived from species of *Gracilaria* for therapeutic purposes (page 104).

Document 3 describes the establishment of a unialgal culture strain by acquiring the matured sporophytes of red algae of the genus *Gracilaria* from the Seto inland sea, stripping the spores therefrom and then cultivating said spores by means of a static cultivation technique; therein, document 3 also indicates that said unialgal culture strain is being continuously cultivated as a stock unialgal culture strain.

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

In the light of document 2, it would have been easy for a person skilled in the art to conceive of growing pure cultures of species of *Gracilaria* in order to produce algae that exhibit various useful characteristics. Meanwhile, documents 1 and 3 present techniques for establishing unialgal culture strains during cultivation, and thus it cannot be considered to be especially difficult to do so. Furthermore, a person skilled in the art could attempt to acquire a species of *Gracilaria* from a population for which few mature algae have been found and then use this species as the starting material for a cultivation process in order to ensure a stable long-term supply of the strain, as appropriate. In addition, the unialgal culture strain set forth in the claims cannot be considered to produce different biologically active substances from the algae described in document 2, even after consideration of the disclosures in the description, and thus the configurations of the inventions set forth in the abovementioned claims cannot be considered to exhibit an especially prominent effect.

Furthermore, the *Gracilaria chorda* presented in document 1 and the *Gracilaria chorda* set forth in the embodiments of the present application were both acquired from the same waters, and thus it is likely that both algae have similar characteristics. Such being the case, it is unclear whether it is possible to differentiate the unialgal culture strain set forth in claims 1 to 4 from the unialgal culture strain presented in document 1 or not.

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The unialgal culture strain set forth in the present application, which was established using algae of the genus *Gracilaria*, is immature, has a rapid growth rate, is capable of absorbing high levels of nutrient salts, and is capable of producing high levels of biologically active substances such as hemagglutinin. If the sporophytes of this starting material algae, which makes it possible to prepare a unialgal culture strain that exhibits these characteristics, are unique, then it is not clear from the disclosures in the description whether it is possible for a third party to easily obtain said sporophytes or not.